



Targeted TAG #7 – TAG Meeting

Date & time: 05/17/2024, 9:00 AM to 10:00 AM

Location: Microsoft Teams Meeting

Presenters: Kathleen Campbell, Brian Robertson

In attendance: Abbie Krebsbach, Abe Abdallah, Bailey Steeves, Brian Robertson, Bruce Folsom, Byron Harmon, Caleb Reimer, Carolyn Stone, Corey Dahl, Daniel Kizer, Debra Campbell, Eric Shierman, Gabe Forrester, Jennifer De Boer, Jodie Albert, Kathleen Campbell, Matthew Doyle, Michael Freels, Michael Meyers, Michael Parvinen, Patrick Darras, Quinn Weber, Russ Nishikawa, Scott Madison, Tamy Linver, Tom Pardee, Travis Hey, Will Gehrke, Zachary Sowards

Presentation #1 – Safety Moment

- Brian Robertson gave a quick safety presentation on staying safe in warm weather.

Presentation #2 – Distribution System Modeling

- Kathleen Campbell, a senior engineer in the engineering service group at Cascade Natural Gas, provided a detailed presentation on distribution system planning. She explained the key aspects of the process, including system dynamics, the use of the Synergi Gas modeling tool, and demand forecasting. Campbell highlighted the importance of accurate data collection and model validation, which is done every three years, to ensure reliability. She also discussed the methodology for developing peak day models to predict demand under extreme weather conditions and noted that the company is now incorporating renewable natural gas (RNG) into its system with new sites in Richland, WA. RNG modeling is initially conservative due to reliability concerns but may be adjusted based on future performance. Campbell emphasized the diverse range of piping and facilities within Cascade Gas's distribution system and the significant efforts invested in maintaining accurate models for effective planning and operation.

Question: Byron Harmon from UTC asked if Cascade has looked at other possible historical analogs, such as heating oil, to gain insights into future trends.

Answer: Brian Robertson acknowledged that while some preliminary research has been done, a thorough investigation into heating oil analogs has not yet been completed. He plans to look into it further.

Question: Byron inquired about the investigation of hydrogen embrittlement with polyethylene pipes.

Answer: Kathleen responded that no thorough evaluation has been conducted yet. The assessment would depend on the specific system into which hydrogen is introduced, and although polyethylene generally hasn't shown issues, each case would need individual evaluation.

Question: Byron asked if any assessment has been made about increasing line pressure to maintain product quality with hydrogen blended fuel.

Answer: Kathleen explained that while some high-level discussions have occurred, the need for increased pressure or larger lines would depend on system dynamics. Each system would need evaluation to determine feasibility.

Question: Byron queried about scenario planning for collateral costs of introducing hydrogen into the system.

Answer: Kathleen noted that specific hydrogen projects are not currently in progress, but the concept would involve creating a hydrogen hub with multiple businesses committing to it. No such opportunities have arisen in their territory yet.

Question: Byron asked if Cascade is considering hydrogen as a parallel system or blending it into the existing system.

Answer: Kathleen clarified that hydrogen could be blended into the existing system, depending on system evaluation and supportability.

Question: Byron asked about the resolution of Cascade's customer data.

Answer: Kathleen confirmed that the data is detailed down to each household or customer's meter.

Question: Byron asked about Cascade's peak day standard.

Answer: Kathleen stated that the peak day standard is based on the coldest average daily temperature over the last 30 years.

Question: Byron asked if the peak day design methodology aligns with the IRP portfolio design.

Answer: Kathleen explained that the peak degree day models are used along with growth projections to forecast for the IRP, ensuring alignment with portfolio design.

Question: Byron inquired about changes in Cascade's 5-year growth prediction since the previous IRP.

Answer: Brian mentioned that the predictions include different scenarios, such as negative growth due to building codes and potential increases if customer counts rise.

Question: Byron asked if the growth predictions are based on historical data.

Answer: Brian confirmed that while historical data is used, the predictions also consider forward-looking factors like regulations and future trends.

Question: Will from UTC asked if Cascade has any bare steel or coal tar wrapped pipes in the system.

Answer: Kathleen responded that there is no bare steel, but some pre-Cascade cold tar wrapped pipes remain, with ongoing replacement projects.

Question: Byron asked about modeling renewable natural gas (RNG).

Answer: Kathleen explained that RNG is currently modeled conservatively due to initial reliability concerns, but this approach may be adjusted based on future performance.

Presentation #3 – Identification of System Deficits/Constraints

- Kathleen continued her presentation by explaining the process of identifying capacity deficits and constraints within the distribution system. She described capacity deficits as critical points where the system has reached its limiting capacity, which could include pipeline bottlenecks, minimum pressure issues, or physical component limitations such as compressors and regulators. Kathleen provided an example to illustrate how pressure deficits could affect the system's ability to deliver gas. She also discussed the importance of growth modeling in predicting capacity deficits,

explaining how five-year growth predictions are added to design day models to assess when and where deficits might occur. The discussion included the challenges of no growth or negative growth in certain areas and the iterative process of adjusting growth models to ensure reliable service during peak demand events. The session concluded with an emphasis on regular system reviews and the integration of reinforcement and enhancement options into the capital budget to address predicted deficits.

Question: Byron asked about converting some lengths of pipe over to telecommunications infrastructure.

Answer: Brian answered that this idea has been discussed within the gas supply group to understand stranded assets better, but there is no immediate experience or plan to implement it quickly.

Question: Byron asked if Synergi analysis can evaluate scenarios like system pruning to minimize fixed costs in deep growth scenarios.

Answer: Kathleen answered that engineers use Synergi for various assessments, including taking pipes out of service or abandoning them for relocations, and it could potentially evaluate system pruning scenarios.

Question: Byron expressed interest in understanding the capabilities of Synergi analysis for deep growth or negative growth scenarios.

Answer: Kathleen explained that Synergi is used to assess system modifications, such as eliminating loops or temporary service interruptions, and is a valuable tool for planning and operational decisions.

Question: Byron noted the unfamiliar territory of negative growth scenarios and looked forward to seeing the analysis Cascade's team could provide.

Answer: Kathleen appreciated the interest and explained the iterative process of growth modeling, predicting deficit timing, and ensuring reliable service during peak demand events. She emphasized the importance of regular system reviews and timely reinforcements.

Presentation #4 – Distribution Enhancement/Reinforcement Options to Address Deficits

- Kathleen continued her presentation by discussing the various options and processes involved in addressing capacity deficits in the distribution system. She explained that solutions might include reinforcements, replacements, loops, backfeeds, pressure increases, or facility upgrades. Kathleen highlighted the importance of considering the practical constructability of proposed solutions, using a theoretical example to illustrate how engineers might choose the best option based on both model simulations and real-world feasibility. She emphasized the need to avoid overbuilding and to select the least costly alternative that meets design goals. Kathleen then described the criteria used in alternative analysis, such as scope, cost, capacity increase, timing, system benefits, long-term planning, and environmental impacts. She also touched on the importance of weighing the pros and cons of each enhancement option.

Presentation #5 – Enhancement Review and Selection Process to Capital Budget

- Kathleen explained how projects get into Cascade's capital budget through a detailed process involving alternative analysis and collaborative decision-making. The goal is to select the shortest, lowest-cost pipeline segments with favorable construction conditions and minimal environmental impact. Equity considerations are also factored in, such as the impact on communities regardless of demographics, ensuring adherence to permitting requirements and addressing noise and sound concerns. Long-term planning and new opportunities for customer service are also considered. Construction costs, city developments, and new housing or

commercial areas are integrated into the growth modeling process. Information from district engineers and city developments is combined to identify system limitations. Projects are then collaboratively selected and ranked by engineers, managers, and directors based on benefits, feasibility, cost, and timing. This process is iterative, allowing adjustments based on new information. The initial budget round occurs in June, with the final budget typically finalized by the end of November. The IRP process involves ongoing steps of growth modeling, alternative evaluation, and budget adjustments as needed.

Question: Byron asked if Cascade has started looking at developing equity enhancement considerations, such as the demographics of impacted communities, property owners, and environmental impacts on historically marginalized communities.

Answer: Kathleen answered that while equity considerations have been discussed, more discussions and strategies are needed to fully address this aspect. Brian added that they would follow up on the progress made in terms of equity in distribution system planning.

Presentation #6 – Feedback for Cascade?

Question: Abe from Oregon Public Utility Commission asked if the five-year process is sufficient for alternatives and if Cascade keeps things on the radar for longer periods. He also asked about the possibility of curtailing load during peak times, particularly for industrial customers, to reduce demand instead of increasing infrastructure.

Answer: Kathleen answered that while they have discussed extending the process to ten years, it is challenging due to regulations and predicting growth even within five years. A ten-year model would require more time and resources. She acknowledged that longer-term planning could help identify alternative solutions earlier. Kathleen also mentioned that curtailment is included in their planning and contracts, especially for interruptible customers in Oregon, and that they have processes in place to monitor and enforce curtailment.

Question: Byron asked about the potential path dependency issues if planning doesn't extend far enough into the future, particularly concerning system updates needed for hydrogen integration and the increasing costs on customers due to regulations like the CCA in Washington.

Answer: Kathleen answered that while some systems might be favorable for hydrogen integration, the challenge lies in projecting long-term impacts due to regulatory and cost uncertainties. She recognized the importance of planning for potential systemic instabilities and suggested that even rudimentary long-term simulations could help mitigate undesirable outcomes for both the company and customers.

Question: Abe asked about the success rate of curtailing interruptible customers and whether it is part of the contract agreement. He also inquired about penalties for customers who do not comply with curtailment requests.

Answer: Kathleen explained that curtailment is enforced through contract terms, and there are penalties for non-compliance. They have systems in place to monitor and ensure compliance, including the ability to shut off meters if necessary. She emphasized that curtailment is a mandatory aspect of their contracts with interruptible customers in Oregon.

Question: Abe expressed concern about relying on solutions like curtailment and asked if there are more firm measures that can be planned and relied upon rather than case-by-case enforcement.

Answer: Kathleen responded that while curtailment is mandatory and enforced through contracts, they also have physical measures in place to ensure compliance if customers do not voluntarily curtail. These measures include sending service personnel to close valves if needed.

Presentation #7 – 2025 WA IRP Schedule

- Brian reminded attendees about the final targeted TAG meeting scheduled in two weeks, where they will discuss resource integration. He mentioned that they are still determining how to handle electrification and whether an extension for the IRP will be necessary. He promised to provide updated options for the remaining IRP schedule at the next meeting. Brian shared the contact information for the IRP team and encouraged attendees to reach out with any questions or concerns. He concluded by confirming the date of the next meeting on Thursday, May 30th.

The Meeting was Adjourned

Per Cascade Commitment #8 (Stakeholder Engagement Design Document, 2/22,2022: “Provide TAG minutes that include the action items from bullet #7 as well as any upcoming deadlines for feedback on the IRP”), here are additional action items to track, coming out of the TAG 6 meeting:

1. Cascade will provide more information on equity impacts to distribution planning in the future.